REDCOAT RESUPPLY! STRATEGIC LOGISTICS AND OPERATIONAL INDECISION IN THE AMERICAN REVOLUTIONARY WAR, 1775-1783

A MONOGRAPH
BY
Major John R. Tokar
Quartermaster

School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas

Second Term AY 98-99

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	27 May 1999	

4. TITLE AND SUBTITLE REDCOAT RESUPPLY! STRATEGIC LOGISTICS AND OPERATIONAL INDECISION IN THE AMERICAN REVOLUTIONARY WAR, 1775-1783

5. FUNDING NUMBERS

6. AUTHOR(S) MAJOR JOHN A. TOKAR

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Command and General Staff College
School of Advanced Military Studies
Fort Leavenworth, Kansas 66027

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Command and General Staff College
School of Advanced Military Studies
Fort Leavenworth, Kansas 66027

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT

APPROVED FOR PUBLIC RELEASE:
DISTRIBUTION UNLIMITED.

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

See ATTACHED

14. SUBJECT TERMS LOGISTICS, BRITISH, AMERICAN REVOLUTION, OPERATIONAL

15. NUMBER OF PAGES 46

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNLIMITED

ABSTRACT

Redcoat Resupply: Strategic Shortcomings and Operational Indecision in the American Revolution, 1775-1783 by Major John A. Tokar, US Army

When war erupted in the American colonies in 1775 at Lexington and Concord, the British Empire was logistically unprepared. Neither the army nor the supporting administration in Great Britain could comprehend the nature of their opponent or the duration of the conflict. British generals eventually came to the conclusion that the system of resupply to the forces in the colonies would have to be reengineered. However, the ability of the British military leadership to convince the entrenched civilian bureaucracy that conditions in the colonies were deteriorating was never truly effective. As a result, British commanders almost always felt constrained by the lack of sufficient supplies and they continue to carry a reputation of having been over-cautious and indecisive.

This study examines the logistical and administrative system that was established to support the army of the British Empire in the American colonies. Furthermore, it explores the impact that strategic deficiencies in that system had upon British military operations in the American Revolution. The Saratoga Campaign, in particular, provides and illuminating example of how weaknesses in the British supply system led to the defeat of the Empire. The U.S. military currently operates in a rapidly changing security environment and is expected to perform non-traditional roles in addition to its conventional warfighting focus. Since the end of the Cold War, the U.S. military increasingly employs a strategy of force projection that is similar in many respects to the circumstances faced by the British in the 18th Century. Although improvements in technology have made the modern battlefield literally unrecognizable when compared to that of 1775, there are logistical tenets and lessons from the American Revolution that are still applicable to strategists and logisticians.

SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

Major John A. Tokar

Title of Monograph: *Redcoat Resupply! Strategic Logistics and Operational Indecision in the American Revolutionary War, 1775-1783*

Approved by:

Robert H. Berlin
Robert H. Berlin, Ph.D. — Monograph Director

LTC Robin P. Swan, MMAS — Director, School of Advanced Military Studies

Philip J. Brookes
Philip J. Brookes, Ph.D. — Director, Graduate Degree Program

Accepted this 27th Day of May 1999

Table of Contents

Chapter 1 - Introduction

"No body ever heard of a quarter Master, in history." General Nathaniel Greene, when asked by George Washington to become the Quartermaster General of the Continental Army.[1]

When war erupted in the American colonies in 1775 at Lexington and Concord, the British Army was logistically unprepared. Neither the army nor the supporting administration in Great Britain anticipated the nature of their opponent or the duration of the conflict. British generals eventually concluded that the system of resupply to their forces in the colonies would have to be reengineered. Despite this realization, the ability of the British military leadership to convince the entrenched civilian bureaucracy in their homeland that conditions were rapidly deteriorating was never truly effective. British commanders, therefore, almost always felt constrained by the lack of sufficient supplies, and thus they continue to carry a reputation of having been over-cautious and indecisive. This poor generalship, along with errant strategy and geographical challenges, is usually presented as a key component in the eventual failure of the British Empire to retain its hold upon the North American colonies during the Revolutionary War.[2]

Logistics were also instrumental in this military defeat. The nature of the conflict dictated that the British Army take the offensive against the rebels. They could not expect to preserve the colonies simply by retaining a few key coastal ports and fortifications. Therefore, the lack of supply reserves was decisive, because it kept British commanders from aggressively propagating the type of war required to crush the rebellion. This monograph is an examination of the logistical system established and employed by the British in the American Revolution, and it extracts those lessons which have continuing relevance for today's military. The study of British

logistical operations during the American Revolutionary War demonstrates the positive and negative impact of strategic logistics upon military operations.

British logistical failures began within the overarching political, military and economic support structure in the British Isles. An examination of the British system of logistics begins with the administrative departments in Great Britain. Compared to the American logistical organization during the Revolution, the British method was, on the surface, the epitome of efficiency. Faced with a 3,000-mile line of communication across the Atlantic Ocean, the Empire ensured that her soldiers were reasonably well equipped and never actually starved. Historian David Syrett notes that "...by any standard, the achievements of the transport service...rank among the greatest military and administrative feats of the eighteenth century."[3] Indeed, a logistical feat of this magnitude would not be repeated for over 150 years, with the Allied invasion of North Africa in World War II. However, significant shortcomings in the British system of resupply did exist, and before these failings were identified and corrected they had contributed to the British Army's failure to subdue the rebellion.

The inadequacies that began in the civilian hierarchy in Britain extended into the supply framework of the British Army in North America. An analysis of how the British Empire supplied her army provides insight as to how critical commodities affected military operations. Lieutenant General John Burgoyne's campaign from Canada into New York, culminating in his surrender at Saratoga in 1777, provides an illustrative example of the logistical strain placed upon the British and the subsequent over-cautiousness of her leadership. This strain resulted from the constraints of operating far from friendly shores and from a failure of British authorities to fully understand the impact of logistical shortcomings upon their operations in the colonies.

The defeat of the British in war was directly related to shortcomings not only in the strategic resupply system, but also in the execution of tactical logistical functions. Furthermore, the outcome highlights the lack of a coherent logistical doctrine. Extensive written doctrine and procedures guide today's logistical operations, but there exists no record of any written logistical doctrine from the 18th Century. Indeed, there was very little *written* military doctrine of any type available to British or American forces fighting in the colonies. To facilitate the study of the British logistical experience, this monograph also investigates current U.S. military logistical doctrine and principles in relation to the strategic and operational levels of war. This provides the evaluation criteria that are applied to the British logistical case study.

The British experience in the American Revolutionary War holds particular relevance for today's military. Even though there have been enormous changes in military technology and organization over the last two centuries, U.S. forces still struggle with many of the same issues that plagued the British effort to keep their army effectively resupplied. Logisticians in a force projection army are still faced with supplying forces over enormous distances, overcoming resource constraints, and relying upon host-nation support. Most importantly, military operations still suffer when logistics are not planned in detail. Historical awareness, particularly through an example such as the British Army during the American Revolution, can serve as a powerful tool to educate commanders and their civilian hierarchy on the importance of strategic logistics, tactical resupply, and leadership. Its particular benefit as a case study stems not only from what the British failed to do, or did improperly, but also from some astonishing achievements that they performed while enduring the hardships of the age.

Chapter 2 – Logistical Principles and the Strategic Link

"The (National War) College is supposed to teach strategy to 'The Thinkers'... and the Industrial College (of the Armed Forces) is supposed to teach logistics to the nuts-and-bolts types." [4]

By not recognizing the link between strategy and logistics the British guaranteed failure in the Revolutionary War. This chapter examines this link and defines the modern logistical principles that will serve as criteria in the evaluation of British experiences. Military strategy and logistics are inextricably related, but this bond has been often been overlooked. Commanders and military commentators have begun to acknowledge the importance of logistics in recent years, yet there still remains a certain reluctance to appreciate the lessons of logistical history. Inarguably, tactics and combat operations make for more exciting reading, and thus the overwhelming preponderance of military history is devoted to those topics. However, even those writers who are supposedly champions of logistical history are guilty of neglecting the real importance of the art and science of sustainment. For example, historian Martin Van Creveld, who wrote *Supplying War*, concludes that the moral domain remains far more important than physical assets. In referring to Napoleon's famous dictum, however, it is important to remember that while the moral aspect of battle cannot be neglected, the fighting ability of an army is very much a function of its logistical efficiency.[5]

The terminology used by suppliers of armies has evolved over time. Although the term "logistics" was first used in the 18th Century, it was not until after World War I that it came into common military usage. The French were probably the first to relate the word in military terms. *Maréshal de logis* (or *camp*) was a title used in Louis XVI's army and *logistique* came into use after the French Revolution. (The Greeks originally coined the term logistics; *logistikos* referred

to a person who was adept at enumeration.) As the title implies, one of the principal duties of this early quartermaster was to ride ahead of the main body to select a suitable place for troops to encamp, which he then marked out with stakes and ropes. This required a certain skill in mathematics and management of a small staff, but unlike today the Quartermaster General in the British Army of the 18th Century was preoccupied with other responsibilities. He was primarily a 'chief of staff' to the commanding general and was the principal staff officer for the army in the field. Supply issues were only one area of concern for him, and were usually delegated to subordinate staff members. The Quartermaster General was also responsible for coordination of all the other staff agencies (intelligence, operations, etc.), and he was a troop commander when the army went on the offensive.[6]

As the duties of individuals have changed with time, so has the meaning of logistics in current U.S. military doctrine. *Joint Publication 4-0, Doctrine for Logistic Support of Joint Operations*, defines logistics as "...the bridge connecting a nation's economy to a nation's warfighting forces," and "...the process of planning and executing the **movement and sustainment of operating forces** in the execution of a military strategy and operations."[7] A more specific definition is found in the U.S. Army's *Field Service Regulations* of 1949: "Logistics is that branch of administration which embraces the management and provision of supplies, evacuation and hospitalization, transportation, and services. It envisages getting the right people and the appropriate supplies to the right place at the right time and in the proper condition."[8] This definition forms the basis for the "characteristics of combat service support" that the U.S. Army espouses today. The British, from the 1800s until after World War II, referred to logistics as *administration*. Until thirty years ago, most military writers seemed more comfortable with that term as well. *Combat service support* is phraseology that is only several

decades old, and it is primarily used by the U.S. Army to refer to those functions that "man, arm, fuel, fix, move, and sustain" soldiers and their equipment.[9] The evolution of the definition of logistics and the subsequent confusion over roles and responsibilities of the various departments serves to explain some of the administrative friction that the British experienced in 1775.

The modern principles that have the most application in the study of 18th Century British logistics are derived from both joint and single-service logistical doctrine. United States joint doctrine espouses seven principles of logistics: responsiveness, simplicity, survivability, flexibility, sustainability, economy, and attainability. The U.S. Air Force retains the same seven principles in their logistical doctrine, but the U.S. Army prefers to adhere to what are described as combat service support (CSS) *characteristics*: responsiveness, anticipation, integration, continuity, and improvisation. The British Army, furthermore, utilizes similar logistical principles: foresight, economy, flexibility, simplicity and cooperation.[10]

The source of U.S. military doctrine that most prominently asserts the importance of logistics to strategic force projection and operations is *FM 100-16, Army Operational Support.* This manual describes support doctrine for the operational level of war, complete with tenets that relate this support to the higher (strategic) and lower (tactical) levels. Strategic logistics encompass a nation's industrial base, and its ability to produce enough men and materiel to propagate war. Tactical support functions are usually very specialized, designed for a specific mission and timeframe. Operational logistics, as noted in joint doctrine, is the bridge between the strategic and tactical levels. Its goal is to allow the tactical commanders to focus their attention on the battle, not rearward toward their logistical tail. Operational support activities extend from theater support bases forward to the logistical elements that are organic to tactical formations. In part because the operational level of war had not yet been defined in 1775, the

British failed to recognize the importance of this link and even today the line between strategy and tactics is very fine. In the logistical arena, the distinction is even more difficult to determine, yet it is just as critical.[11]

These doctrinal sources provide the criteria for analyzing logistical operations of the past and the effectiveness of methods employed. Logistical doctrine, as modern militaries understand it, did not exist in the 18th Century. The importance of effective supply operations was recognized, but logisticians were not generally involved in developing strategy or planning operations. Therefore, today's logistical theory and doctrine provide useful benchmarks by which we may study past logistical effectiveness. Principles from the sources described above can be combined and adapted to form a few essential criteria for the purposes of this monograph. **Responsiveness, flexibility** and **continuity** deserve particular attention because these three tenets are timeless in their application to logistical operations. Since the advent of written logistical doctrine, militaries around the world have espoused their value.

Responsiveness is the keystone of U.S. armed forces logistical doctrine: "...all else becomes irrelevant if the logistic system cannot support the concept of operations of the supported commander."[12] In essence, it entails getting the right support to the force at the right time. The concept of responsiveness includes elements of many of the other principles, particularly anticipation and foresight. Having logistical responsiveness means having the ability to anticipate the requirements that the supported force will have, and having the foresight to develop and attain the means to accomplish the supply mission. The scope of this principle extends from pre-conflict acquisition and development through termination, and it encompasses all the other logistics principles. *Flexibility* includes elements of cooperation, improvisation and integration. Logisticians must be able to adapt their means of support to the changing conditions

on the battlefield. Redundant capabilities are an important element of flexibility, as is the ability for logistical operations to be decentralized. Strategic and operational logistics can benefit by a certain level of centralization, but military operations require redundancy, and at the tactical level, decentralization leads to added flexibility. Finally, *continuity* is a principle that combines, among other elements, sustainability and survivability. Support is required before and after the conflict, and some logistics functions are actually heavier when the combat force is not actively engaged. This was certainly the case with the British when in garrison, particularly during the winter months when they were not campaigning. The ability to maintain uninterrupted support of the combat force is critical to mission success. The tenuous 3,000-mile line of communication between the British Isles and North America made this principle even more critical. [13]

These principles are not the only required elements for logistical success, but they are vital considerations if the combat commander is to be effectively supported. They also provide a solid platform for the analysis of past operations. Understanding how logistics are defined today as well as in the latter 18th Century is essential to a thorough comprehension of the British experience during the American Revolution. Despite the presence of a Quartermaster General, logistical "experts" were practically non-existent in the British Army at that time. The following chapters demonstrate that the inability to integrate logistics with strategy, combined with a failure to recognize the impact of inadequate logistics upon campaign planning, played a significant role in the failure of the British Army to hold the colonies.[14]

Chapter 3 – The British Logistical Organization

"Our army...is healthy, brave and zealous...(but) twelve hundred leagues with its natural difficulties demand a solemn thought—the means and expense," Admiral James Gambier, 1776. [15]

In the second half of the 18th Century, the British Empire had a system in place to support its widely dispersed colonial armies, but it was plagued with many internal problems. When pressured by a quick succession of overseas conflicts these faults were quickly exposed. The British, to their credit, were able to correct many of these deficiencies prior to the end of the American Revolution, but not in time to stop the war.

Three separate bodies were established to support the Empire's colonial armies: the Treasury Department, the Navy Board and the Ordnance Board. At the outbreak of hostilities in North America, the Treasury Department had overall responsibility for supplying the army. A division of labor did exist, but it was not rigidly maintained, and there was some duplication of effort. There was little cooperation among the distinct bodies, and actual competition for resources and finances from the Crown. The Navy Board was responsible for transport of infantry and cavalry soldiers, clothing, hospital supplies, tents and other camping equipment. The Ordnance Board was obligated to transport engineers, as well as supply artillery, guns, and other ordnance stores, to include ammunition. In addition to overall coordination, the Treasury's primary charter was to provide food supplies, to include forage for animals. [16]

The Treasury Department carried out its duties adequately in peacetime, but was initially not well prepared for war. The administrative system of the British Empire was extremely decentralized and when colonial wars erupted, weaknesses in this design were exposed. For the military defense of the American colonies against Indians or rival Europeans, the British

Parliament simply asked each colony to provide a quota of men and supplies. This was not a draft, per se, and the colonies could (and sometimes did) refuse. Occasionally, the Empire would reimburse the colonies for the men and equipment provided, but such payment was inconsistent. The British Army at the time was primarily a colonial garrison force, and there was no general staff in England to serve as a central command. There were no Army officers in the chain of command at all above the regimental level prior to the outbreak of war. Thus, officers appointed to staff positions in the various boards and departments charged with supporting the army in the field were inexperienced. The Navy Board was slightly better organized than the Treasury, undoubtedly due in part to Britain's preeminence as a sea power.[17]

The position of Quartermaster General (QMG) had existed in the British Army organization since 1689, and the Quartermaster Department was the senior service department in the Empire. When the army was campaigning, however, the QMG had numerous duties, and logistics routinely suffered due to insufficient leadership. Brigadier General Sir William Erskine was the QMG for Generals Howe and Clinton, but his command duties kept him so occupied that he devoted very little time to his supply responsibilities. He delegated these responsibilities to subordinates who were often incompetent and corrupt. Campaigning so degraded Erskine's health that he eventually had to be replaced.[18]

The Commissary was the next largest department in the British service corps. The Commissary General was a civilian, and his staff in the colonies gradually expanded to about 300 men. Charged with obtaining adequate provisions for the army, the commissariat had a challenging mission even in peacetime, but in war, procurement of fresh food became the primary supply problem for the British. This department was traditionally rife with corruption, and the first Commissary General, Daniel Chamier, was not only dishonest but also incompetent.

Chamier's biggest failing was an inability to accurately report the total number of individuals in the colonies who required rations. The Treasury could only base its ration acquisition and shipping requirements on the numbers supplied by Chamier. Largely through ineptitude, the total requirement sent to England by Chamier was routinely an average of 4,000 rations short. It failed to account for officers, wives, children, refugees and others who were entitled to army-provided rations in some form. This entitlement was specified in the existing regulations concerning the allocation of rations.[19]

The Barracks Master General was also a crucial member of the commander's logistical staff in America. He was not only responsible for ensuring that the troops were quartered properly in garrison, but he had to provide them with the tents, cots, stoves and other camping gear to live in the field during campaigns. He was responsible for providing fuel for heat in the form of firewood and, later in the war, coal. Medical and Engineer departments rounded out the commanding general's support staff in the colonies. The men who occupied the position of Barracks Master General during the American Revolution, like many of the army's service support corps, were likely to exploit their position for personal gain. [20]

Corruption and profiteering were rampant in many areas of the British logistical organization. The British Army's service corps had no shortage of unethical individuals in its ranks. However, many of the practices deemed corrupt today were not only not *crimes* under British law, they were rarely even considered to be morally or ethically wrong in the 18th Century. Commissaries of the time routinely kept the "fifth quarter" of butchered livestock for themselves, that being the head, hide and tallow. These parts would then be sold for personal profit. This sale was deemed acceptable, but it invariably led to more unscrupulous acts. A common practice among the contractors providing food for shipment in England, as well as the

commissaries in the colonies, was to provide amounts of dry goods (flour, rice, etc.) that were less than the standard measure. Barrels of flour could be as much as 10% short of their advertised amount. No record exists of what eventually happened to the millions of crates, boxes, barrels, bags and other packaging material shipped to America. Much of the material was in very poor condition and would have been disposed of upon arrival, but one can assume that the commissaries sold much of it for profit. [21]

Another policy heartily abused by the Commissary General and his men was that concerning captured cattle. Fresh meat being in great demand, the army agreed to pay soldiers one dollar (1/2 pound sterling) per head of cattle brought to the commissaries for use by the army. However, the Commissary General routinely paid the soldiers the dollar they were owed from his own pocket, then sold the livestock to the army at market value, making considerable personal profit. Similarly, the practice of reimbursing civilians for commandeered provisions was converted into a moneymaking scheme for the men of the commissary. If the army in the field had to commandeer provisions from the local populace, the soldiers were supposed to provide the farmer with a receipt that he could then take to the commissary for reimbursement. However, for various reasons, the locals never appeared to claim the money they were due, being either afraid or convinced that reimbursement was unlikely. The commissaries pocketed the money set aside for this purpose, reporting that the claims had been paid.[22]

Transportation was another source of corruption and profiteering in the British logistical system. A Parliamentary commission appointed to review the expenditure of public funds in 1781 discovered that the majority of wagons and horses hired to support the British Army in America were owned by the officers in the Quartermaster General's department. These were the same officers responsible for doing the hiring, which by the standards of the time constituted an

ethical violation. The total cost of land transport from 1777 to 1782 averaged over 200,000 pounds per year, and an owner of 50 four-horse wagon teams could expect to profit nearly 10,000 pounds annually, a very considerable sum for the time. Although this and other profitable practices were not necessarily crimes by contemporary standards, there is evidence that many of the officers knew that what they were doing was improper. "They went to some lengths to conceal their ownership and even, when defending the system of hiring wagons before a board of general officers in New York in 1781, did not reveal their proprietal interest in the service." [23]

Most major forms of profiteering and corruption were brought to a halt by 1780, but the damage had been done, and precedents, once set, were hard to erase. Minor ethical transgressions continued to occur. For example, officers were not entitled to free rations while in garrison, but many had arrangements with the commissary agents to provide them, their families and friends with free food. Furthermore, when campaigning in the field, officers would subsist on army rations, of course, but the existing policy was that their wages would then be garnished for the meals they consumed. That almost never happened. (Interestingly, this practice is still commonplace in the U.S. Army today.) The danger, however, was that by allowing these seemingly minor abuses to occur, commanders opened the door to further transgressions. Soldiers and officers alike witnessed tacit approval of these actions, and some were then emboldened to attempt larger crimes. These minor infractions also had a negative impact on the morale of the fighting force, because the common British infantryman was inevitably aware of the large-scale profiteering of the quartermasters, as well as of the fact that officers and their families routinely subsisted much better than he did.

The Articles of War governing the conduct of British soldiers during the American

Revolution were written in 1765. They contained rules governing the general conduct of all of the Empire's forces, whether at home or deployed abroad. Sections VIII through XIII pertained specifically to logistical actions, with Article I of Section XIII containing the harshest language concerning those who were predisposed to profiteering and corruption:

> "Whatsoever Commissioned Officer, Store-keeper, or Commissary shall be convicted at a General Court-martial of having sold, embezzled, misapplied, or willfully, or through neglect, suffered and of Our Provisions, Forage, Arms, Clothing, Ammunition, or other Military Stores, to be spoiled or damaged, the said Officer, Storekeeper, or Commissary so offending, shall, at his own Charge, make good the Loss or Damage and be dismissed from Our service, and suffer such other Penalty as by the Acts of Parliament is inflicted." [24]

This act served as the means for declaring nearly all of the acts described in the preceding paragraphs as criminal. Punishment was not uniform, however, and very few British soldiers were ever convicted of wrong-doing under these statutes.

Transportation problems were not limited to those involving corruption. The challenges encountered in conducting the trans-Atlantic transport of provisions, supplies, ordnance and reinforcements were enormous. Although the British overcame these obstacles better than any of their contemporaries, sea transportation was ultimately the logistical tenet that was the most difficult to master. Insufficient shipping was the primary cause of food shortages suffered by the British Army. Most ships were contracted and controlled by the respective boards. Many were old, not seaworthy, and manned by ordinary merchant crews. The departments often could not cooperate, and in their zeal to acquire more shipping assets, they bid against each other and drove prices higher. Many British merchants did not want to lease their ships to the war effort because it was not profitable for them. They could not find return tonnage, and their ships could wait as long as eight weeks to be unloaded in American ports. Holland and Germany were scoured for available ships, and many were subsequently hired. French merchant ships were

available early in the war, but the British, because of contempt for the quality of these vessels, would not consider their use.[25]

The voyage from Cork to America was long and dangerous for man and animal alike. "The situation was truthfully, if rhetorically, summed up by an officer of the Guards...when he wrote: 'There was continued destruction in the foretops, the pox above-board, the plague between decks, hell in the forecastle, the devil at the helm.' " Many soldiers became sick and even died from scurvy and smallpox. In 1781, a shipment of German soldiers was sent to New York. Out of 2,400 that left Europe, 410 were sick upon arrival and 66 were dead. Similar was the fate of many horses. In 1777, live horses were thrown overboard as a 'humane alternative' to watching them die from hunger and thirst. They had only been provided with three weeks of forage for a journey that lasted forty days in good weather.[26]

Initially, the capture of British supply ships was an additional concern, because as contracted merchant vessels they were not armed. By late 1776, though, the British resolved the crisis, first by lightly arming victuallers against colonial raiders then, once France entered the war, by having naval escorts for all supply convoys. The merchant ships were not trained well to deal with contingencies once underway, and often were diverted to other ports for various reasons. Many never reached their intended destination. An entire convoy of supply ships sat at Halifax for a month, because the garrison had already moved to New York and the ships' captains had no orders to follow them there. Furthermore, New York harbor was an incredibly inefficient operating port at that time. It was such a bottleneck that ships could wait up to eight weeks to be unloaded. After a fire in 1778 destroyed many of the warehouses along the waterfront, the British suspected rebel arsonists and proceeded to store large amounts of food

aboard ships in the harbor (as many as 33 at one point!). This put increased demands on a transport service that had already reached the breaking point.[27]

The organization of the British administrative system was complex and initially ill suited for sustaining a war so far from England. The decentralized, civilian-led bureaucracy that effectively maintained far-flung colonies during times of relative peace was not prepared to support its army in a hostile environment. The lack of integration between the warfighting strategy and logistical design ensured that the army would suffer from a lack of provisions and supplies. Interagency cooperation was nonexistent at the outbreak of hostilities in 1775, which compounded the inefficient use of transportation and other available resources. Corruption and profiteering simply made matters worse. These inadequacies formed a very unstable base for the entire logistics framework that extended from London and Cork to British garrisons in the colonies.

Chapter 4 – Strategic Logistics and Host Nation Support

There "was not enough to thrive on and too much to die of starvation," Stephan Popp, from his journal, 1777. [28]

The problems of supplying the army from Great Britain were manifest, and the most serious challenge was that of providing food over such a tremendous distance. Cork was the primary victualling port, primarily because of its large natural harbor and its proximity to the American colonies, but also because the farms of Ireland were a major source of food. Additionally, southern Ireland was an important recruiting center for the army, and thus troops were easily put aboard victuallers (food ships) for transport to America. Contractors hired from throughout the British Isles were required to deliver their goods to the port already packaged for shipment. This packaging was often very poor, and the voyage was long, rough and damp. Barrels routinely did not survive the journey, and if they did, they often were not strong enough to be moved onto wagons and shipped overland. Corruption and incompetence were problems with contractors in England, too, but they were not held responsible for their product after delivery to Cork. [29]

Quality control was initially lacking. Flour barrels were frequently 5-6% lighter than advertised by the contractor. Similarly, barrels of meat or pork could be short as much as 20 lbs. in a barrel containing 200 lbs. In one convoy in 1775, five ships contained 7,000 barrels of flour. Upon arrival in Boston, 5,000 barrels were condemned outright. Instead of 12,000 men having bread for 5 ½ months, the flour was consumed in only 47 days! In 1778 alone, flour deficiencies amounted to over 640,000 lbs., enough to feed 20,000 soldiers for over a month. An attempt was made in 1776 to ship hard biscuits instead of flour, but the result was not promising. "The best

that was said was that old rotten pieces were mixed in with the new, the worst (that was said) was unprintable." The commissaries were also guilty of leaving good food to spoil on the docks, due either to mismanagement or to lack of transportation.[30]

The Treasury was undeniably trying to do its best for the army. In October of 1775, the department undertook a remarkable effort to supply the army in Boston with enough quality fresh provisions to last through the winter. The intent was to have the soldiers well fed and rested for a spring campaign. The firm of Mure, Son & Atkinson was contracted to furnish enough fresh food to fill thirty-six ships.

> "Besides the usual beef, pork, bread, pease, and oatmeal, they loaded on board...some 500 tons of potatoes, sixty of onions, fifty of parsnips, forty of carrots, and twenty of raisins, as well as 4,000 sheep and hogs and 468,750 gallons of porter...Considerable care attended all this. The contractors noted that they had gone to great trouble to determine the best method of storing potatoes, and they were loaded very gently into the ships 'so as not to bruise them.' Onions were packed in hampers for the same reason, and as the several tons of sauerkraut being shipped would not have completed the fermentation process, each cask was fitted with a spring-loaded pressure relief valve. Finally, in recognition of the perils of shipping livestock, a premium of two shillings and sixpence was promised to the masters of the transports for each animal delivered alive." [31]

All this hard work was for naught as one of the worst storms in years struck the convoy. Many of the ships were forced to turn back to England, others diverted to Antigua, and still others spent weeks sailing up and down the eastern seaboard of America waiting for the weather to break while their cargoes rotted. American privateers also took their toll, and only thirteen ships eventually made it to Boston, with very little of their cargo. Only the preserved food (sauerkraut, vinegar, and porter) survived intact. Most of the other provisions were rotten, damaged or dead (only 148 of the livestock survived). Additionally, out of 856 horses shipped, only 532 survived the voyage. This convoy marked the last time that Britain attempted to ship fresh food and

livestock to its army. The demand was *not* too much for British capacity, but when compounded by bad weather and profiteering, the system broke down.[32]

Shipment of certain commodities from Britain was eventually deemed impracticable, so the army resorted to local sources for fresh food, fodder and transportation. Although British logisticians performed significantly better than their American counterparts, their shortcomings had a much greater impact on the course of the war. The undying hope of the British government that its army could subsist locally in America is itself a curiosity. It stemmed, in part, from the success it had had during the Seven Years' (French and Indian) War. Most of the support for the army during that conflict had been acquired locally, and shipment of supplies from Britain was limited. The Treasury had organized a system of subcontractors throughout Canada and the colonies, and had not even appointed a Commissary General.[33]

During the American Revolution conditions were quite different. This time the enemy was more determined, and the British overestimated both the amount of loyalist support and their own ability to cultivate it. Acquiring subsistence locally was impossible once the rebels laid siege to the British garrison in Boston. After moving to New York in the summer of 1776, hopes that the army could live off the abundant farmland in New Jersey and Long Island were soon crushed. Foraging parties sent into eastern Long Island met with resistance, and ended up consuming more supplies than they were able to gather. Washington's Christmas counterattack ended all hope of gathering supplies from New Jersey farms. The logistical battle really began in earnest as a result of British defeat at Trenton. In Philadelphia a year later the logistical situation initially looked promising. Pennsylvania farms were bountiful, and the British hoped to find abundant loyalist support, but again that support dried up. This continuing hope that enough provisions and supplies could be procured within the colonies must have stemmed, in part, from

the belief held by many British that it was only a matter of time before the rebels 'came to their senses' and returned to British rule. The conclusion was finally accepted: fresh food, forage for livestock, fuel and transport had to be obtained locally.[34]

Flour was imperative for making fresh bread, and other grains and vegetables were important to the soldiers' diet. Fresh meat, however, outranked nearly all other foodstuffs. Units in the field went to great lengths to add fresh beef, pork, mutton, poultry and other meats to their diet. The policy of paying individuals for captured cattle was only one method. In one instance, British soldiers reported subsisting on alligator and oysters, complimented by Madeira they found on a shipwreck off the South Carolina coast. Probably of equal significance to meat (at least to the infantryman) was alcohol. Copious amounts of porter were shipped initially, but eventually a spruce beer brewery was established locally. At the discretion of the commander, soldiers were authorized one pint per day in garrison, and two pints per day in the field. Fresh ingredients in the beer were thought to offset the likelihood of scurvy. Furthermore, rum was available from the West Indies, and rationed at two quarts for every six men. It was presumably for purifying drinking water, but it was certainly abused to some degree.[35]

British efforts to subsist locally could have been more successful if they had developed a coherent strategy to utilize loyalist (Tory) support. Loyalists in the colonies accounted for perhaps half the population, and were typically conservative, cautious and pacifist. Many of the more fundamental religious sects were largely loyalist, or at least neutral. They were not ideal conscripts for military service, but they could have served as a greater source of logistical support. The army repeatedly misjudged not only their character, but also the amount of popular support in a given area of operations. The Battle of Saratoga was a prime example, as will be discussed in the following chapter. The British also perceived that there existed a large loyalist

base in the Middle Atlantic colonies, perhaps due to the existence of Quakers and other religious groups in Pennsylvania. Upon their occupation of Philadelphia, the army did have moderate success in obtaining fodder and other supplies from local farmers, at the expense of Washington's army at Valley Forge, but the gains were short lived. This strategic failure stemmed, in part, from the refusal of the British to believe that the majority of colonists did not want the return of British rule. They repeatedly alienated both loyalists and otherwise neutral citizens, and they failed to cultivate what could have been a decisive logistical contribution.[36]

The ability of the Empire to resupply her troops solely from Great Britain was never possible, nor was it ever seriously considered by the administration. The army could not sustain itself strictly with what it obtained locally, either, but a proper balance was never achieved. The enormous challenges that surfaced when Britain attempted to ship fresh provisions, livestock, fuel and fodder to the embattled army were equal to the hardships faced when the army endeavored to forage locally for supplies. British leadership properly assumed that a large loyalist population existed in the colonies, but they never employed a coherent strategy to maximize its use. These formidable logistical hurdles, coupled with the inconsistent and inefficient civilian hierarchy outlined in the previous chapter, ensured that whatever momentum British generals were able to generate would be extremely difficult to maintain.

Chapter 5 – Impact of Logistics on Operations

"I have no money, no provisions, nor indeed any account of the sailing of the Cork fleet, nor admiral that I can have the least dependence on, no army. In short, I have nothing left but the hope for better times and a little more attention."
Sir Henry Clinton, General of the British Army, 1780. [37]

Large reserves of food, fodder and other supplies were seen as imperative by British commanders, and the absence of sufficient quantities of these items must be viewed as the greatest failing of the British supply system. British generals felt that they needed at least six, but preferably twelve, months of supplies in reserve before commencing an offensive campaign. Only during two campaign seasons over the course of the war did they have supplies in what they perceived as necessary amounts. Furthermore, when supply reserves dropped below the two-month level, which they often did, British generals stopped thinking about offensive action and began to plan evacuation. Abandoning a garrison was no simple task, due primarily to the shortage of transportation. The army never had enough ships to move the entire force in one lift, and therefore it was essential that withdrawals be planned in detail and carefully executed.[38]

The British Army repeatedly attempted to subsist through the practice of foraging, but it was never entirely successful for several reasons. Foraging was no longer part of conventional strategy. It was time consuming, tiring and considered by many British soldiers to be beneath them. Foraging parties required a covering force, which was a further drain on manpower, and which consumed even more supplies. To compound the problem, many foraging expeditions produced little or no results, which was not only demoralizing, but also placed a further drain on already dwindling supplies. Conventional tacticians of the time did not trust living off the land, because it could be bad for morale and it could also lead to looting, unauthorized foraging and desertion. Furthermore, under the 18th Century concept of limited war (at least the British

model), civilians from whom supplies were taken were supposed to be reimbursed, and it was simply more expedient to take what was needed by force. Such pillaging alienated Americans who were sympathetic to the British or at least otherwise neutral.[39] Worst of all, foraging exposed great numbers of British soldiers to guerilla warfare, to include ambushes and snipers. Foraging parties grew to as large as 5,000 men, but they were habitually harassed by small parties of rebels. British losses in these types of skirmishes soon equaled those of larger pitched battles.[40]

The first significant strategic judgment made because of logistical considerations was to abandon Boston in the fall of 1775. Lieutenant General John Burgoyne was the first to recognize that even if British forces were successful in initiating a campaign from Boston, it would be very hard to maintain a line of communication with supply bases around Boston. Not only were the rebels likely to attack the precarious supply lines, but they were also likely to sweep the area clean of any usable food and fodder. Thus, General Thomas Gage, the British Army commander from 1768-1775, finally decided that the evacuation of Boston was unavoidable. In correspondence to England in October, 1775, Gage admitted, "It appears to me most necessary for the prosecution of the war to be in possession of some province where you can be secured, and from whence draw supplies of provisions and forage, and that New York seems to be the most proper to answer these purposes." [41]

Having decided to vacate Boston, Gage's successor General Sir William Howe and his deputy General Sir Henry Clinton agreed with Gage's analysis and initially wanted to move the garrison to New York. From there, they could attack southward, for they believed that the geographical center of gravity was the Middle Atlantic colonies. If the army could defeat the Continental Army there and subsequently convince those colonies to remain loyal, Howe felt that

the South would capitulate, and then New England would have no choice but to follow suit. With less than six weeks of provisions on-hand and no knowledge of when his next shipment might arrive, Howe had no choice but to leave. However, despite the desire to move to New York for strategic reasons, the decision was made to reposition the garrison to Halifax, Nova Scotia, primarily because Howe and Clinton were unsure that they could adequately subsist in the New York area. Moreover, they were equally unsure as to when they could expect the next supply convoy from Cork. (The state of supplies at Halifax was not much better than at Boston, but at least the locals were friendly.) The move was hastily carried out, with significant logistical consequences. An estimated 30,000 lbs. of supplies were left behind because of inadequate shipping, and immediately fell into the hands of the rebels.[42]

After more than three months in Halifax, Howe finally decided to move the garrison to New York. Because of shipping delays in England, however, Howe was forced to postpone his move southward. Four victuallers were held up in Cork from January until April for unknown reasons. Furthermore, the Treasury delayed sending troops and other supplies because of a rise in shipping rates. The result of these obstacles was that Howe and his army lost two months of the campaign season in New York and New Jersey. The impact of those two lost months was decisive for the British. As a direct result of insufficient logistics Howe was not able to land at Staten Island until the middle of the summer.[43]

Despite this late start, 1776 was perhaps the best year of the war for the British. They had success against Washington at Long Island and White Plains, and eventually had the Continental Army reeling in New Jersey. Washington was initially vulnerable and could have been soundly defeated. Had those two months not been lost, Howe might have been able to conquer Pennsylvania as well, which would have had drastic consequences for the rebel cause.

This instance is one that historians frequently use to point out indecision and caution in the British leadership, but logistics certainly played a large part in the events that unfolded that year. As historian Edward Curtis noted, "This (the capture of Pennsylvania) would have been a far more serious blow to the Americans than the occupation of New York and New Jersey alone. Indeed, it might have sufficed to terminate the war." [44]

Logistics also played a decisive role during the British expedition from Canada in 1777, perhaps more so than at any other time during the war. During this campaign, the British acutely felt most of the logistical shortcomings detailed above, while the American supply system saw some of its greatest success. The British concept for the campaign, which eventually concluded at Saratoga, involved a three-pronged approach. Burgoyne was to lead forces south from Canada, along Lake Champlain and down the Hudson River. General Howe was supposed to detach a force from New York to move up the Hudson to meet him, and Lieutenant Colonel Barry St. Leger hoped to create a diversion along the Mohawk River from Lake Ontario and join them from the west. By adopting this strategy, the British hoped to split America in two, eliminating the possibility of mutual support between the New England colonies and those in the Middle Atlantic and South. Unfortunately, Howe never really supported the concept, preferring to keep the bulk of his forces in New York for a southerly push. St. Leger laid siege to Fort Stanwix, but was forced to retreat by the arrival of Benedict Arnold and 900 militia. Meanwhile, Burgoyne's force had such difficulties from the outset with terrain, transportation and supplies that it never had a chance to decisively defeat the rebels. From a logistical standpoint, Burgoyne's struggle is the most illuminating of the three movements.[45]

Canada, where Burgoyne's expedition was to begin, was an entirely separate command after 1775, and although British forces there struggled with many of the same challenges faced

by Howe in the colonies, the area managed to provide some logistical advantages. Being completely under British control after 1776 was certainly a benefit, but much of the logistical success in the Canadian theater was due to Sir Guy Carleton, the governor general. Carleton was able to eliminate much of the corruption and profiteering that was disabling Howe's army and, in particular, he established a commissariat that operated with a much higher degree of honesty and efficiency. However, historians have criticized Carleton for the failure of the previous year's campaign, which, had it proven successful, would have eliminated the need for Burgoyne's campaign in1777. Carleton exercised the same over-cautiousness that plagued nearly every British military leader throughout the war, but he was also the ill-fated victim of severe weather that year.[46]

When Burgoyne returned to America on May 7, 1777, Carleton had already been notified that he would not be in command of the campaign that year. Nevertheless, he had collected most of the necessary supplies and equipment which Burgoyne required by that time, and he did not let personal misgivings about the decision affect his logistical preparations. However, Carleton did *not* make adequate arrangements for transportation of troops and equipment, and this failure would prove to be fatal to the expedition. For nearly a month after Burgoyne's arrival, Carleton did little to obtain the horses, carts and drivers necessary to conduct the portage that would be required at the south end of Lake Champlain. Carleton had assumed that sufficient numbers of Canadian farmers (really French Canadian peasants) would volunteer their services as *corvees* (as required by law) and conduct the portage mission. These laborers never materialized, and Burgoyne finally directed him to contract for 500 two-horse carts for provisions and additional 400 horses to haul artillery pieces.[47]

Burgoyne knew that these quantities would not be sufficient to support the army for the duration of the campaign, but he relied on the column's ability to obtain additional transportation support on the march. This was a fundamentally bad assumption, largely based on faulty intelligence. Under the best of circumstances, the region they were to traverse would have failed to adequately sustain an army, due largely to the sparseness of the population. Furthermore, the inhabitants were for the most part unfriendly. The 500 carts originally contracted were only enough to haul fourteen days' provisions, instead of the thirty days that Burgoyne had intended to always carry. To compound the already critical transportation problem, the contractors did not provide carts and horses in the numbers originally requested, and many of the civilian drivers later deserted the campaigning army.[48]

Burgoyne's forces initially consisted of nearly 9,000 soldiers, of which about half were British and half German. Of the eight total German regiments, roughly 3,000 soldiers were hired from Duke Carl I von Braunschweig. The latter were not merely Hessian mercenaries, but regular troops hired by the crown, commanded by Major General Baron von Riedesel and bound by a loyalty oath. [49] Burgoyne was also relying on Carleton to provide nearly 2,000 Canadian militia to assist in bridge building, act as escorts and, most importantly, hold captured fortifications while his army advanced. However, that number was probably never greater than 150, and as a result many of his regulars had to be detached for those tasks. Furthermore, of the 1,000 Indians he expected to have accompanying his army, he only received about half. Despite having fewer personnel, wagons and horses than expected, Burgoyne decided to commence the expedition in the third week of June, 1777. The men were encumbered by bulky uniforms, particularly those of the German dragoons, "...which included heavy leather breeches, leather gauntlets extending high up the arms, big plumed hats, and high jackboots that weighed more

than twelve pounds a pair."[50] Historians still debate why Burgoyne chose to march with dismounted dragoons, but most conclude that he assumed he could obtain the necessary horses later.

Burgoyne's officers, undoubtedly following the example set by their commander, insisted on bringing enormous amounts of personal possessions on the expedition. Burgoyne's baggage alone was said to occupy thirty carts, and although some stories of his opulent lifestyle in the field have been routinely exaggerated, he and his officers usually enjoyed their time on campaign. As Sir Francis Clerke wrote to his father on 10 September 1777:

> "...This campaigning is a favourite portion of Life; and none but stupid Mortals can dislike a lively Camp, good Weather, good Claret, good Musick and the Enemy near. I venture to say all this for a little fusillade during dinner does not discompose the Nerves of even our Ladies." [51]

Compounding the critical transportation shortage even further was Burgoyne's insistence on hauling 138 artillery pieces in anticipation of protracted siege operations against American fortifications. The delays caused by moving the artillery overland were what gave the rebels time to prepare their defenses and to amass troops at critical locations. As historian Hoffman Nickerson pointed out in 1926, " 'It was the very movement of that apparatus that created the necessity of employing it.' " [52]

American Major General Philip Schuyler was in command of the Northern Department, which included New York. He considered Major General St. Clair to be his best subordinate, and he was placed in charge of the defense of Fort Ticonderoga. However, the fort had been allowed to fall into disrepair, and St. Clair was inadequately manned and supplied. Furthermore, by failing to occupy Mount Defiance (Sugar Loaf Hill), which was decisive terrain that overlooked Fort Ticonderoga, the Americans made it relatively easy for the British to capture it.

In retrospect, Burgoyne's forces probably could have bypassed the fort, but at the time Ticonderoga was considered the "Gibraltar" of New England, and its possession by the Americans was of tremendous psychological importance.[53]

Burgoyne was able to maximize the use of his strongest support asset, that of waterborne transportation, nearly up to the base of the fort. By early July it was in British hands, and the Americans lost many lives, a large amount of supplies, and 128 cannon. Because of the British supply shortages, the capture of provisions and weapons represented an even more significant loss to the Americans. Between Mt. Independence and Fort Ticonderoga the British captured 1,768 barrels of flour, 649 barrels of pork, five barrels of beef, thirty-six bushels of salt, one hundred pounds of biscuit, 180 pounds of peas, and 120 gallons of rum. Additionally, they added ammunition, forty artillery pieces, and two hundred boats to their own stocks. Schuyler, however, had tremendous appreciation for logistical matters, and he "refused to despair" after the loss of Ticonderoga. Instead, he adopted tactics that he knew would exacerbate the supply difficulties which the British were already experiencing. As they withdrew southward, Schuyler ordered his men to fell trees across the roads and into Wood Creek to inhibit the British advance. Furthermore, he adopted a 'scorched earth' policy, ordering all "...crops burned, bridges destroyed, and all possible horses, cattle, and wheeled vehicles moved out of Burgoyne's reach."[54]

Burgoyne's choice to utilize two routes to move supplies, men, and equipment from the lakes to the Hudson River has often been criticized as a tactical error, but it made sense logistically. Both routes, however, had their disadvantages. He chose to send his artillery and other heavy supplies south through Lake George, again maximizing his use of water transport, even though it took seventeen days to get all the boats and equipment past the falls between

Lakes Champlain and George. The other route, from Skenesboro by way of Wood Creek and Fort Ann, was the recipient of Schuyler's scorched earth tactics, and it required significant manpower and time to clear the roads of fallen timber. What should have been a two-day march took nearly three weeks, an average advance of only one mile per day. Philip Skene, the Tory chief of Skenesboro, reportedly urged Burgoyne to use this route so that he had the British Army's manpower to improve his infrastructure, to include a two-mile causeway through a marsh. These continual delays further strained the British food supplies.[55]

Burgoyne was now at what some consider the decisive point in time of the entire campaign. Because he had received no replies to his urgent requests that Howe commence operations northward up the Hudson to meet him (as was originally planned), he correctly assumed that no assistance was coming from that quarter. Moreover, he had received no word from St. Leger in the west, and his logistical situation was now deplorable. Although several other options were available to the commander, Burgoyne decided to keep his main force at Fort Edward, while conducting a local foraging expedition with a detachment. Von Riedesel suggested conducting a raid to Bennington, Vermont, because intelligence sources reported that a large supply of corn, flour and cattle existed there, guarded only by local militia. Additionally, the German commander was hopeful of acquiring additional horses to mount his forces. Skene had assured Burgoyne that the countryside around Bennington was full of loyalists, and that the suspected enemy militia force was weak. He was not aware that American General John Stark had assembled 1,500 New Hampshire militia in a single week, and was preparing to face his raiding force. Moreover, the composition of the force was curious, and included female camp-followers and musicians. On 16 August, the detachment was attacked, and the resulting British losses approached 900, half of them regulars.

Burgoyne had to garrison Ticonderoga because Carleton was unable to augment his force, and this compounded the impact of the defeat in Vermont. The raid proved that the initial estimates of loyalist support in the area were extremely misguided. When Burgoyne subsequently learned of the defeat of St. Leger by Benedict Arnold his right flank became suspect. Furthermore, the considerable delays caused by insufficient supplies and over-cautiousness had allowed the rebels to amass a considerable opposing force to his front. To withdraw completely would be to admit that his plan was flawed, and that, to Gentleman Johnny's ego, was unacceptable. By 13 September, he finally had accumulated thirty days of supplies, so he chose to cross the Hudson and attack Gates' army. He had perhaps resigned himself to his fate by this time, justifying his failings by reasoning that his expedition was only intended to tie up Gates so that he could not move south on Howe.[56]

On 19 September, Burgoyne approached Freeman's Farm with about 6,800 regulars and 870 others. He had only moved fifty miles in the seventy-four days since arriving at Skenesboro. Clinton, although under no instructions from Howe to do so, finally responded to Burgoyne's urgent request by moving a force of 3,000 men up the Hudson on 3 October. His progress was slow, however, and as had happened earlier, the delays allowed the rebels to swell their ranks (now more than 23,000 men), while the meager British supplies continued to dwindle. Burgoyne was forced to either retreat or plan a final drive south in an attempt to meet Clinton. His reconnaissance met with fierce American counterattacks, and on 7 October the British withdrew to Saratoga.

Ten days later, hopelessly surrounded, with his supplies exhausted, and with no hope of replenishment, Burgoyne surrendered. The oppressive New York summer, dense foliage, difficult terrain, and the consequent delays that allowed the rebels to reorganize and resupply

their forces compounded the inadequacy of Burgoyne's transportation and were the primary factors leading to the surrender. The British had abandoned their greatest advantage of the war—command of the sea—to adopt a plan of inland invasion that was dependent on lines of communication which were precarious at best. Although they did achieve temporary command of the lakes, they failed to use it to their logistical advantage. As historian James Huston points out, "Burgoyne allowed logistics to become his master instead of his servant. He was so concerned with getting everything up to meet all possible contingencies that he was too paralyzed to meet any contingency."[57] Burgoyne was unable to seize the initiative at any time, and surprise was almost always a tool of his enemy.

Burgoyne made many tactical errors, to be sure, but the larger strategic mistakes are probably the ones that were fatal. Burgoyne was guilty of taking enormous baggage trains, he perhaps delayed unnecessarily in taking Fort Ticonderoga, and his choice of the Skenesboro route over that of Lake George is suspect, at least in hindsight. However, strategic planning mistakes were made in London before the campaign ever commenced (although Burgoyne was a participant in that planning), and coordination between Lord Germain and Burgoyne was lacking. Another critical flaw was the assumption that loyalist support abounded in the countryside of New York and Vermont, and would thus be a repository for logistical aid. Most important was the fact that Howe never intended to support Burgoyne's effort by sending a force north to Albany. His focus remained to the south, towards Pennsylvania and the Middle Atlantic colonies.[58]

Instances of logistical inadequacy and its impact on operations did not end with British defeat at Saratoga. The entry of France into the war following the debacle at Saratoga caused a change of strategy in London. The command of the army was given to Clinton on May 8, 1778

in Philadelphia, and he was instructed to go on the defensive. He was ordered to immediately abandon that city and fall back upon New York. Clinton was also instructed to carry out "harassing operations," which were consistent with his need to forage the countryside for provisions. In addition, he was instructed to send large detachments of his army to Georgia and the West Indies. The cumulative affect of these orders was to cause Clinton to sink into a deep despair, feeling that London had given up on his army's ability to quash the rebellion outright. The amount of provisions that he was receiving from Cork only reinforced in his mind that Whitehall had switched their priorities to the West Indies. His despondency over ceasing to be perceived as the main effort, as well as the lack of adequate supplies from England caused another campaign season to pass without significant offensive action being taken by the British.[59]

The final significant example of British logistical inadequacy occurred in 1781 in North Carolina. Lord Cornwallis had the unenviable task of pursuing Nathaniel Greene's army. Cornwallis had limited success, but the campaign shows not only the lack of logistical assets, but also the lack of understanding of basic logistical principles. Greene had been given the Southern Command, replacing Horatio Gates, after serving two years as Washington's Quartermaster General. This had provided Greene with an impressive education on the importance of logistics. Although he had an inferior force, he divided it in the face of Cornwallis' greater numbers, primarily so that he could subsist off the land with greater ease. Cornwallis, conversely, was keeping a line of communication open to the coast so that he could maintain his resupply options. In January, 1781, however, he cut his force loose of its baggage trains in order to increase his speed of pursuit. (He actually burned his wagons and remaining supplies!) He was soon forced to halt his pursuit of Greene in order to collect flour and other provisions, and over 250 men deserted rather than face the further hardships that would be incurred while foraging.

Cornwallis' gamble paid off in the short term, for he managed to catch Greene's force at Guilford Court House. However, his fundamental mistake was one so often witnessed in the early years of the war: a flawed assumption that a significant loyalist presence in the region would rise up and provide for his army. The lack of provisions meant that his men were soon too ragged to follow up on the victory at Guilford. Cornwallis was forced to return to the Cape Fear River, where he could receive supplies by sea and attempt to refit his army. As soon as he disengaged, Greene quickly reorganized his own forces, moved away from Cornwallis into South Carolina, and continued his mission of reducing British control there.[60]

As these examples clearly demonstrate, the lack of sufficient provisions and the means to transport men and equipment impacted military operations. Saratoga is widely recognized as the pivotal campaign in the American Revolution,[61] and it is also the one that most clearly displays British logistical inadequacies. Because of the strategic challenges imposed by geography and a less than friendly local population, the study of the British in the Revolution also presents numerous lessons for the modern logistician, as the following chapter reveals.

Chapter 6 –Analysis and Conclusions

"Our trouble will always be the limit of possibility in transporting, clothing, arming, feeding, and caring for our soldiers and that requires organization." Elihu Root, United States Secretary of War, 1903.[62]

Nearly every time the British Army appeared ready to strike a decisive blow, one that would cripple the colonial army, it seemed that a shortage of reserves and lack of faith in resupply prevented action. British generals, particularly Howe and Clinton, were not willing to gamble their forces in an offensive campaign without considerable supplies in reserve. Clinton's tendency toward inactivity cannot be blamed solely on logistics, to be sure. His feeling that Britain was neglecting him was not unfounded.[63] The failure of the administration to provide his army with adequate provisions was not due to neglect, but to a logistics system that was inadequate and poorly managed. In further defense of British generalship, gambling with their army on extended campaigns with meager provisions and no guarantee of when the next shipment was coming was a large risk indeed. Howe and Clinton could not afford to lose the army, for there were no replacements in England.

An aggressive, offensive war was the only type that was going to successfully retain the colonies for the Empire. To have any hope of victory, the British had to seek out the rebel army and defeat it. Yet far too often their soldiers were forced to sit and wait, or worse, to evacuate a position, garrison, or city that had already been gained through difficult fighting. The effect that logistics had upon these decisions to wait or pull back is undeniable. The examples of Trenton and Saratoga clearly demonstrate how the long delays caused by insufficient supplies and cautiousness allowed the rebels to repeatedly concentrate their forces at critical locations or to avoid a potentially crushing defeat.[64]

Supply shortages impacted the conduct of the war in many ways. Foremost was the manner in which troops were diverted from their primary task (fighting) because they had to forage the countryside in order to survive. Foraging operations were time consuming and increased the already high stress on soldiers and leaders. In addition to the physical demands placed upon the men and equipment, foraging that produced little or no results had a demoralizing effect. The numbers of soldiers who died or were wounded on foraging missions were a very tangible result of logistical deficiencies.[65]

Questionable generalship, corruption and a largely hostile population also had far ranging implications for an army that could not afford to occupy garrisons in port cities and wait for the enemy to capitulate. A recurring assumption that loyalists would somehow materialize and join forces with the British Army was one of most inexplicable occurrences of the war. The recruitment of Tories as an effective fighting force may not have been an achievable goal, but the loyalist population could have been a prodigious logistical asset if they had been effectively cultivated. Instead, the negative aspects of foraging alienated many potential British allies. On a strategic level, the impact of the Saratoga campaign was more far-reaching for it brought France into the war. Sea power was the single ingredient that gave the British a chance of regaining their colonies after six long years of war. Soon after Saratoga this dominating advantage started to erode, resulting in Britain's ultimate defeat at Yorktown.

Applicable lessons for modern military strategy and logistical planning and operations are numerous. Strategic lift of forces and supplies into the theater of operations remains the most immediate concern for a deploying army. Current U.S. military strategy is based upon force projection, and this is often predicated on the assumption of sufficient time for a build-up of supplies and combat power prior to the commencement of hostilities. The British did not have

sufficient time given the limitations of their logistical organization, and British generals never felt that they had sufficient stores to effectively campaign against the rebels.

Other pertinent lessons include the use of host nation support and the transportation of bulk cargo. A relevant model from the British experience in 1775 can be derived from their expectation of loyalist support in the colonies. Today, the U.S. military formulates a significant amount of its force projection strategy on the premise that host nation support will be available to augment the logistical assets that can be brought into theater. This was demonstrated in every military action of the 1990s, from the Gulf War through the Balkan engagements. The ability to gather intelligence about available local assets and the predilection of the population to provide support has advanced significantly in two hundred years, but the primary lesson should not be lost: the U.S. cannot automatically assume that host nation support will be willingly provided by every nation from which it intends to stage military operations. Additionally, transportation managers still wrestle with packaging certain commodities, and when depending on civilian support, they may see the negative influence of the profit margin on supply operations. A modern example was the shipping of airdrop cushioning material for use in the Bosnian humanitarian airdrop mission, Operation Provide Promise, in 1993-4. The material is very bulky, yet so lightweight that civilian shipping agents and trucking companies would not routinely accept the cargo. This is a direct parallel to some of the problems encountered by the British during the Revolutionary War. Merchant shipping agents routinely rejected contracts from the Treasury Board because certain cargo, such as animal fodder, was too light to be profitable.[66]

A broader critique of the British inability to successfully integrate strategy and logistics shows that they never recognized the importance of modern logistical tenets such as

responsiveness. They also did not acquire the proper balance of centralized versus decentralized logistical management. Despite overcoming enormous geographical obstacles and displaying occasional logistical brilliance, such flaws in the administrative system contributed greatly to Britain's overall failure. In the final analysis, British logistics lacked responsiveness; they consistently failed to get the right supplies, men and equipment to the right place at the right time. Furthermore, at the strategic level, the system lacked any degree of flexibility. When shipping prices rose or certain commodities were temporarily unavailable, for example, the ministers of the various departments seemed incapable of developing alternative solutions. These same ministers (and others in positions of influence) were often petty and unable to work together for the common good of the deployed army.

Modern logistics doctrine emphasizes the importance of centralized planning and decentralized execution with respect to support tasks. *FM 100-16, Army Operational Support*, perceptively notes that "too much centralization often results in rigidity and sluggish response, while too little often causes waste and inefficient use of critical resources." [67] This was a tenet that the British never grasped, for they were always highly centralized in their logistical planning and execution. Instead of using the positive qualities of centralization to their advantage, they robbed their units in the field of critical flexibility and responsiveness by not decentralizing at all. Moreover, a limited duplication of assets and management is not only justified when executing military operations, but it is mandatory to mission success. Responsiveness, which is perhaps the "golden rule" of logistics (then and now), was never a trait the British were able to master.

Weighed against its modern counterpart, 18th Century logistical operations would appear to be relatively simple. The challenges faced by the British from 1775 to 1783, however, were

not of lesser significance than today's logistical hurdles, just of a different nature. Instead of having to maintain high-technology weapons and manage supersonic transportation assets, the suppliers of that time had to contend with ships at the mercy of winds and currents, and the challenge of providing fresh rations without the benefit of canning or refrigeration. At the height of the war in 1780, Britain was maintaining over 92,000 troops overseas, including those in Florida and the Caribbean, and the majority of these soldiers had to be fed and equipped from the British Isles. This was at a time when it could take three months to receive an answer to a simple communication or request. Actual delivery of certain items often took more than a year.

Many of the challenges faced by the British during those eight years, as detailed in the preceding chapters, have *not* changed significantly in two centuries. Operations still suffer when logistics are not planned in detail. Corruption and unethical behavior, although not as significant in today's force, can still have a negative impact on an army's ability to fight. These problems are inevitably compounded when operating in a theater where the supply system cannot rely on host-nation support, or at least on a population that is friendly or neutral. These irrefutable facts make the study of British logistics during the Revolutionary War particularly rewarding to any logistician in today's military, and the lessons derived from the American Revolution can still be educational on many levels. Logistics, while in varying degrees still neglected by generals and historians alike, greatly influenced the outcome of the American Revolution. While not the sole or primary cause of British defeat, its impact was inarguably noteworthy.

ENDNOTES

[1] Library of Congress, Manuscript Division, Washington Papers, Volume 104, f. 82 (Greene to Washington, 24 April 1779). Cited in Charles R. Shrader, *U.S. Military Logistics, 1607-1991: A Research Guide*, (New York: Greenwood Press, 1992), 1.

[2] John Shy, *A People Numerous and Armed: Reflections on the Military Struggle for American Independence*, (Ann Arbor: The University of Michigan Press, 1993), 210-2. See also Don Higginbotham, *Reconsiderations on the Revolutionary War*, (Westport, Connecticut: The Greenwood Press, Inc., 1978) and John Richard Alden, *General Gage in America,* (New York: Greenwood Press, 1969.)

[3] David Syrett, *Shipping and the American War*, (London: The Athlone Press, 1970), 248.

[4] *The Washington Post Magazine*, November 4, 1984. Cited in Kenneth N. Brown, *Strategics: The logistics-strategy link*, a National Security Essay, (Washington, D.C.: National Defense University Press, 1987), 1. Brown, who was a U.S. Army colonel at the time, authored this National Security Essay in an effort to get the strategists, or 'thinkers,' to integrate logistics planning into all phases and levels of military planning and operations.

[5] Martin Van Creveld, *Supplying War: Logistics from Wallenstein to Patton*, (New York: Cambridge University Press, 1977), 237, cited in Brown, 5.

[6] Julian Thompson, *Lifeblood of War: Logistics in Armed Conflict*, (London: Brassey's, 1991), 6-7. See also Van Creveld, *Command in War*, (Cambridge: Harvard University Press, 1985), 35-7.

[7] Chairman of the Joint Chiefs, *Joint Publication 4-0: Doctrine for Logistic Support of Joint Operations*, (Washington, D.C.: 27 January 1995), v.

[8] James Alvin Huston, *The Sinews of War: Army Logistics, 1775-1953*, (Washington, D.C.: Office of the Chief of Military History, 1966), vii-viii.

[9] Shrader, 2-3.

[10] Thompson, 7. These characteristics are described in detail in *FM 100-10, Combat Service Support*, last updated in 1995, and they will require further revision after the Army's capstone doctrinal manual, *FM 100-5 Operations*, is renewed in fiscal year 2000.

[11] Department of the Army, *FM 100-16: Army Operational Support*, (Washington: 31 May 1995), iv-vi.

[12] CJCS, *Joint Pub. 4-0*, II-1.

[13] Ibid., II-2, 3. See also Department of the Army, *FM 100-10: Combat Service Support,* (Washington, D.C.: 3 October 1995), 1-2 to 1-5, and Department of the Air Force, *Air Force Doctrinal Document 40: Logistics*, 8-11.

[14] Despite the conclusion that logistics played such a prominent role in British defeat, however, amazing feats of transportation and sustainment were demonstrated. Great Britain did not become the greatest sea power of their age without a certain ability to manage and support overseas forces.

[15] Navy Records Society, *The Private Papers of John, Earl of Sandwich*, (London, 1932-38), ii, 299-300. Cited in Syrett, 182.

[16] R. Arthur Bowler, *Logistics and the Failure of the British Army in America, 1775-1783*, (Princeton: Princeton University Press, 1975), 12-18. This work is the **best single source** on British logistics during the

American Revolution. It was initially a doctoral thesis carried out simultaneously with Syrett's study noted above and Norman Baker's *Government and Contractors: The British Treasury and War Supplies, 1775-83*, (London: Athlone Press, 1971.) All three theses were conducted under the direction of Professor I.R. Christie at University College in London.

[17] Ibid., 20. See also James A. Huston, *Logistics of Liberty: American Services of Supply in the Revolutionary War and After*, (Newark: University of Delaware Press, 1991), 15-20.

[18] Huston, 17. See also Bowler, 20-3.

[19] Bowler, 20-35.

[20] E. Wayne Carp, *To Starve the Army at Pleasure*, (Chapel Hill: University of North Carolina Press, 1984), 19-20.

[21] Bowler, 170-71.

[22] Ibid., 175.

[23] Ibid., 183-186.

[24] William Winthrop, *Military Law and Precedents*, (Washington, D.C.: Government Printing Office, 1920.), 931-8.

[25] Curtis, 124, 127-31.

[26] Ibid., 125-6.

[27] Bowler, 127-9.

[28] Stephan Popp, "Popp's Journal, 1777-1783", edited by Joseph G. Rosengarten, *Pennsylvania Magazine of History and Biography*, 26, p. 32-3. Cited in Sylvia Frey, *The British Soldier in America: A Social History of Military Life in the Revolutionary Period*, (Austin, Texas: University of Texas Press, 1981), 31.

[29] Edward E. Curtis, *The Organization of the British Army in the American Revolution*, (New York: AMS Press, Inc., 1969, reprinted from the edition of 1926), 83-85.

[30] Bowler, 101.

[31] Ibid., 53-4.

[32] Ibid., 55-60.

[33] Ibid.

[34] Ibid., 47, 50, 65-67.

[35] Curtis, 105-115.

[36] Robert M. Calhoon, "Loyalism and Neutrality," in *The Blackwell Encyclopedia of the American Revolution*, (Cambridge, Massachusetts: Basil Blackwell, Inc., 1991), 247-59.

[37] Sir Henry Clinton, *The American Rebellion: Sir Henry Clinton's Narrative of his Campaigns, 1775-1782, with an Appendix of Original Documents*, edited by W.B. Willcox, New Haven, 1954. Cited in Bowler, 262.

[38] Bowler, 93-4.

[39] Ibid., 68, 79.

[40] Higginbotham, 68-69.

[41] British Public Record Office: Colonial Office, "*Class 5 Files: Part 5: The American Revolution, 1772-1784*," edited by Randolph Boehm, microfilm collection, (Bethesda, Maryland: University Publications of America, 1984), 5/92, 291.

[42] Carp, 73. See also Bowler, 62, 107-8.

[43] Bowler, 107-8.

[44] Curtis, 101. See also Bowler, 108-9.

[45] Huston, 91.

[46] Bowler, 212-20.

[47] Ibid., 225.

[48] Ibid., 225-230.

[49] Johann Freidrich Specht, *The Specht Journal: A Military Journal of the Specht Campaign*, translated by Helga Doblin, (Westport, Connecticut: The Greenwood Press, Inc., 1995), xiii-xiv. See also William Seymour, *The Price of Folly: British Blunder in the War of American Independence*, (London: Brassey's, 1995), 103. Seymour, who spent fifteen years as an officer in the Scots Guards, is a direct descendant of Burgoyne.

[50] Gerald Howson, *Burgoyne of Saratoga*, (New York: The New York Times Book Co., Inc., 1979), 187.

[51] Ibid., 188.

[52] Hoffman Nickerson, *The Turning Point of the Revolution*, (Boston: Houghton-Mifflin, 1928), 165. Cited in Huston, 97. See also Huston, 93-6.

[53] Seymour, 105.

[54] Huston, 93-5.

[55] Ibid., 96-7.

[56] Piers Mackesy, *The War for America, 1775-1783*, (Cambridge: Harvard University Press, 1965), 134-7.

[57] Huston, 101-3.

[58] George Athan Billias, "John Burgoyne: Ambitious General," in *George Washington's Opponents: British Generals and Admirals in the American Revolution*, (New York: William Morrow and Company, Inc., 1969), 108.

[59] Bowler, 122-3.

[60] Ibid., 51-2, 56, See also Huston, 248-50.

[61] See Mackesy, Higginbotham and Billias.

[62] Elihu Root, "The Character and Office of the American Army," (a banquet address delivered at Canton, Ohio, 27 January 1903), cited in Shrader, *U.S. Military Logistics*, 9. As a result of the logistical failures exposed during the Spanish-American War in 1898, Root was instrumental in reforming the War Department with respect to military logistics.

[63] Bowler, 106.

[64] Bowler, 262-4. See also Syrett, 248.

[65] Ibid., 242.

[66] From the author's personal experience as the commander of 5th Quartermaster Detachment (Airdrop Support) during *Operation Provide Promise*, the largest-ever humanitarian airdrop mission. Eventually, costly U.S. Air Force C-5 transports were used to move the "honeycomb" from the U.S to Germany, where the airdrops originated. Even though the C-5's were fully loaded with the packaging material, the total weight was less that 1% of the airplane's capacity, and an enormous misuse of an expensive asset. Yet there was no acceptable civilian alternative.

[67] *FM 100-16*, vi.

BIBLIOGRAPHY

Primary Sources

British Public Record Office, Colonial Office. *"Class 5 Files: Part 5: The American Revolution, 1772-1784."* Edited by Randolph Boehm. Bethesda, Maryland: University Publications of America, 1984.

Burgoyne, John. *A State of the Expedition from Canada.* New York: The New York Times and Arno Press, 1969 (reprinted from the original of 1780).

Grose, Francis and Dan Cragg. *The Mirror's Image: Advice to the Officers of the British Army—With a Biographical Sketch and a Bibliography of the Works of Captain Francis Grose, F.S.A.* Philadelphia: Owlswick Press, 1978.

George III, King of Great Britain, 1738-1820. *The Correspondence of King George the Third from 1760 to December 1783,* 6 Volumes. Printed from the original papers in the Royal Archives at Windsor Castle; arranged and edited by Sir John William Fortescue. London: MacMillan, Inc., 1927-28.

Simcoe, John Graves. *Simcoe's Military Journal: A History of the Operations of a Partisan Corps, Called the Queens Rangers.* New York: Bartlett and Welford, 1844.

Specht, Johann Freidrich. *The Specht Journal: A Military Journal of the Specht Campaign,* translated by Helga Doblin. Westport, Connecticut: The Greenwood Press, Inc., 1995.

Official Sources

Chairman of the Joint Chiefs. *Joint Publication 4-0: Doctrine for Logistic Support of Joint Operations.* Washington, D.C.: 27 January 1995.

Department of the Air Force. *Air Force Basic Doctrine.* Washington, D.C.: September 1997.

_____. *Air Force Doctrine Document 40: Logistics.* Washington, D.C.: 11 May 1994.

Department of the Army. *FM 100-5: Operations.* Washington, D.C.: 14 June 1993.

_____. *FM 100-7: Decisive Force: The Army in Theater Operations.* Washington, D.C.: 31 May 1995.

_____. *FM 100-10: Combat Service Support.* Washington, D.C.: 10 February 1988.

_____. *FM 100-16: Army Operational Support.* Washington, D.C.: 31 May 1995.

Jessup, John E., Jr., and Robert W. Coakley. *A Guide to the Study and Use of Military History.* Washington, D.C.: U.S. Government Printing Office, 1979.

Schrader, Charles R. *United States Army Logistics, 1775-1992: An Anthology.* Washington, D.C.: U.S. Army Center for Military History, 1997.

Books and Articles

Alden, John Richard. *General Gage in America.* New York: Greenwood Press, 1969.

Baker, Norman. *Government and Contractors: The British Treasury and War Supplies, 1775-83.* London: Athlone Press, 1971.

Billias, George Athan. *George Washington's Opponents: British Generals and Admirals in the American Revolution.* New York: Morrow Press, 1969.

Bowler, R. Arthur. *Logistics and the Failure of the British Army in America, 1775-1783.* Princeton: Princeton University Press, 1975.

Brown, Kenneth N. Strategics: the logistics-strategy link. Washington, D.C.: National Defense University Press, 1987.

Calhoon, Robert M. "Loyalism and Neutrality," in *The Blackwell Encyclopedia of the American Revolution.* Cambridge, Massachusetts: Basil Blackwell, Inc., 1991.

Carp, E. Wayne. *To Starve the Army at Pleasure.* Chapel Hill: University of North Carolina Press, 1984.

Curtis, Edward E. *The Organization of the British Army in the American Revolution.* New York: AMS Press, Inc., 1969, reprinted from the edition of 1926.

Frey, Sylvia R. *The British Soldier in America: A Social History of Military Life in the Revolutionary Period.* Austin, Texas: The University of Texas Press, 1981.

Higginbotham, Don. *Reconsiderations on the Revolutionary War.* Westport, Connecticut: The Greenwood Press, Inc., 1978.

Hogg, Oliver Frederick Gillilan. *The Royal Arsenal: Its Background, Origin, and Subsequent History.* London: Oxford University Press, 1963.

Howson, Gerald. *Burgoyne of Saratoga.* New York: The New York Times Book Co., Inc., 1979.

Huston, James A. *Logistics of Liberty: American Services of Supply in the Revolutionary War and After.* Newark: University of Delaware Press, 1991.

Mackesy, Piers. *The War for America, 1775-1783.* Cambridge: Harvard University Press, 1965.

Pagonis, William G. *Moving Mountains: Lessons in Leadership and Logistics from the Gulf War.* Boston: Harvard Business School Press, 1992.

Seymour, William. *The Price of Folly: British Blunders in the War of American Independence.* London: Brassey's Ltd., 1995.

Shrader, Charles R., editor. *U.S. Military Logistics, 1607-1991: A Research Guide.* New York: Greenwood Press, 1992.

Shy, John. *Toward Lexington: The Role of the British Army in the Coming of the American Revolution.* Princeton, N.J.: Princeton University Press, 1965.

_____. *A People Numerous and Armed: Reflections on the Military Struggle for American Independence.* Ann Arbor: The University of Michigan Press, 1990.

Syrett, David. "The British Armed Forces in the American Revolutionary War: Publications, 1875-1998." *The Journal of Military History* 63 (January, 1999): 147-64.

_____. *Shipping and the American War.* London: The Athlone Press, 1970.

Tilley, John A. *The British Navy and the American Revolution.* Columbia, South Carolina: University of South Carolina, 1987.

Thompson, Julian. *The Lifeblood of War: Logistics in Armed Conflict.* London: Brassey's, Ltd., 1991.

Van Creveld, Martin. *Supplying War: Logistics from Wallenstein to Patton.* New York: Cambridge University Press, 1977.

Walker, Robert M. "British Logistics in the American Revolution." *Military Review* 41 (November, 1961): 39-45.

Wickwire, Franklin B. *British Subministers and Colonial America: 1763-1783.* Princeton, New Jersey: Princeton University Press, 1966.

Winthrop, William. *Military Law and Precedents.* Washington, D.C.: Government Printing Office, 1920.